Remarks and Arguments

Applicant has carefully considered the Office Action dated September 29, 2004 and the references cited therein. Applicant respectfully requests reexamination and reconsideration of the application.

Allowable Claims

Applicant acknowledges the Examiner's indication that claims 6, 7, 18, 25 and 32 would be allowable if rewritten in independent form, including all the limitations of the base claim and any intervening claims.

Rejections Under 35 U.S.C. §102

Claims 1-5, 8-16, 19-24, 26-31 and 33-37 stand rejected under 35 U.S.C. §102(e) as being anticipated by Searls, et al., U.S. Patent No. 6,752,635. Applicant respectfully traverses this rejection as follows.

The present invention is directed to a Land Grid Array (LGA) socket that includes contacts of at least two different sizes. A first type of contact is capable of carrying a larger amount of current than a second type of contact. In one embodiment, the first contact is larger than the second contact. These contacts are positioned in a respective passage formed within a plate. As the contacts are of different sizes, the corresponding passage in which a contact is placed, is sized accordingly. Thus, in a plate in accordance with one embodiment of the present invention, passages of various sizes will be found. The contacts, as shown in Figs. 4A-4D of the application, range in size and shape. The contacts with a larger contact surface area are capable of carrying a greater amount of current than a contact with a smaller contact surface area.

Searls is directed to an LGA socket that has a separate power delivery contact area that includes contact pins and contact pads that are ganged together using a cross beam to form a comb-shaped contact. (Abstract). As shown in Fig. 2B, a socket body 204 has a signal delivery area 224 and a power delivery area 226. (Col 3, lines 16-18). In the signal delivery area 224, each of the slots 212 includes a single contact 106 that solders to a single solder pad 216 and mates with a single land 209. (Col. 3, lines 32-37). According to Searls, the contact 206, as shown in Fig. 2C, fits into a slot 244 in the power delivery area 226 of the socket body 204, solders to a solder pad 246, and mates with a single land 248 [sic, 238]. (Col. 3, lines 37-43).

As disclosed by Searls, the contact 206 comprises a plurality of contact pins 240 with a common bond at the base, for example, cross beam 242 coupling the contact pins 240 to one

another. (Col. 3, lines 52-62). Each pin of the plurality of pins 240, contacts a corresponding pad, for example, an IC package 208 to couple to, for example, solder pads on a printed circuit board as shown in Fig. 4.

In contrast, claim 1, as currently amended, is directed to a socket forming electrical connections between a first surface having a first contact array and a second surface having a second contact array. The socket includes a plate with a plurality of passage extending therethrough and a plurality of compliant contacts with each contact being inserted into one of the passages. Each contact includes a first contact surface for electrically engaging the first contact array and a second contact surface for electrically engaging the second contact array. At least one of the contacts is a low current contact and at least an other one of the contacts is a high current contact capable of passing more current than the low current contact. Further, the first contact surface consists of a first unitary surface area and the second contact surface consists of a second unitary surface area where the first and second contact surface areas of the high current contact are larger than the first and second contact surface areas, respectively, of the low current contact.

In order to anticipate a claim, a reference must disclose each and every limitation of the claim. Applicant respectfully submits that Searls does not disclose each limitation as is cited in claim 1. Claim 1, as above, recites that each contact has first and second contact surfaces that consist of, respectively, a first unitary surface area and a second unitary surface area. Further, the first and second contact areas of the high current contact are larger than the respective first and second contact surface areas of the low current contact.

Searls discloses a contact 206 that includes a plurality of pins 240 that are ganged together using the cross beam 242. Thus, Searls provides a plurality of contact areas on at least one end of the contact 206. For at least this reason, Applicant respectfully submits that Searls does not anticipate that which is recited in Applicant's claim 1.

As claims 2-5 and 8-14 depend from independent claim 1, Applicant respectfully submits that for at least the same reason as submitted above with respect to claim 1, these claims are not anticipated by the cited reference.

Claim 15, as amended, is directed to a method of passing signals between a first surface having a first contact array and a second surface having a second contact array. A socket is provided having a plurality of compliant contacts where at least one of the contacts is a low current contact and at least an other one of the contacts is a high current contact. A first contact surface of each contact is electrically coupled to the first contact array and a second contact surface of each contact is electrically coupled to the second contact array. The first contact

surface consists of a first unitary surface area and a second contact surface consists of a second unitary surface area where the first and second contact surface areas of the high current contact are larger than the first and second contact surface areas, respectively, of the low current contact.

For at least the reasons submitted with respect to independent claim 1, Applicant submits that claim 15 is not anticipated by the Searls reference. As claims 16, 19 and 20 depend from independent claim 15, Applicant submits that these claims are also allowable over the cited reference.

Independent claim 21, as amended, is directed to a socket for forming electrical connections between a first surface having a first contact array and a second surface having a second contact array. The socket comprises a plate defining a plurality of passages extending therethrough and a plurality of compliant contacts with each contact inserted into one of the passages. Each contact includes first and second contact surfaces wherein at least one of the contacts is a small contact and at least another one of the contacts is a large contact. The first contact surface consists of a first unitary surface area and the second contact surface consists of a second unitary surface area and the first and second contact surface areas of the large contact are at least twice as large in area as the first and second contact surfaces of the small contact.

For at least the reasons submitted above with respect to independent claims 1 and 15, Applicant respectfully submits that Searls does not anticipate that which is recited in claim 21. Further, as claims 22-24 and 26-29 depend from independent claim 21, these claims are also not anticipated by the cited reference.

Independent claim 30, as amended, is directed to a method of passing signals between a first surface having a first contact array and a second surface having a second contact array. The method comprises providing a socket having a plurality of compliant contacts wherein at least one of the contacts is a small contact and at least another one of the contacts is a large contact. The socket is compressed between the first and second surfaces such that a first contact surface of each contact is electrically coupled to the first contact array and a second contact surface of each contact is electrically coupled to the second contact array. The first contact surface consists of a first unitary surface area and the second contact surface consists of a second unitary surface area. The first and second contact areas of the large contact are larger than the first and second contact surface areas, respectively, of the small contact. A respective surface area of the first and second contact surfaces of the large contact is at least

twice as large as a corresponding respective surface area of the first and second contact surfaces of the small contact.

Similar to the traversal submitted above with respect to independent claims 1, 15 and 21, Applicant respectfully submits that Searls does not anticipate that which is recited in independent claim 30. In addition, as claims 31, 33 and 34 depend from independent claim 30, these claims are also not anticipated by the cited reference.

Independent claim 35, as amended, is directed to a plate for a socket, the socket including a plurality of double sided contacts for forming electrical connections between a first surface having a first contact array and a second surface having a second contact array. The plate comprises surfaces defining an array of passages, with each passage extending through the plate such that one of the contacts can be inserted into each passage. At least one of the passages is a small passage having a first size and at least another one of the passage is a large passage having a second size larger than the first size. Further, the array has an outer periphery and only large passages are positioned on the outer periphery.

Searls discloses a power delivery area 226 in which slots 244 to receive the contact 206 are placed. Searls discloses that the power delivery area 244 is different from the signal delivery area 224. Searls, however, does not disclose that the periphery of the entire space, i.e., that which encompasses the signal delivery area 224 and the power delivery area 226, is populated only by the larger slots 244. For at least this reason, Applicant submits that independent claim 35 is not anticipated by the Searls reference. As claims 36 and 37 depend from claim 35, these claims are also allowable over the cited reference.

Rejections Under 35 U.S.C. §103

Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Searls.

As dependent claim 17 depends from independent claim 15, Applicant respectfully submits that this claim is also not rendered obvious by the Searls reference for at least the reasons submitted above with respect to the §102 rejection of claim 1. Accordingly, Applicant respectfully requests that this §103 rejection be withdrawn.

The amendments to the claims, as set forth herein, including the addition or cancellation of any claims, have been offered to advance this application to issue. None of the amendments made herein should be construed as an admission that the subject matter of the claims, as originally filed, is anticipated by or made obvious in light of any art of record whether considered singularly or in combination. Applicant respectfully reserves the right to pursue the originally

filed claims in another co-pending application without being prejudiced by any amendments, including cancellation of claims, made herein.

Applicant believes the claims are in allowable condition. A notice of allowance for this application is earnestly solicited. If the Examiner has any further questions regarding this amendment, the Examiner is invited to call Applicant's attorney at the number listed below. The Examiner is hereby authorized to charge any fees or credit any balances under 37 C.F.R. §1.16 and 1.17 to Deposit Account No. 02-3038.

Respectfully submitted,

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